PATENT

Application # 09/867,803

Attorney Docket # 1005-006


# AMENDMENTS

## AMENDMENTS TO THE CLAIMS


1.  (Currently Amended) A computer-assisted method for evaluating a cluster assignment for an observation, comprising the activities of:

    for each of a plurality of observations, obtaining a data set containing no more than one proxy value for each of a plurality of variables, each variable having a plurality of possible values, the data set also containing a cluster assignment for the observation, the cluster assignment identifying one cluster from a plurality of clusters;

    for each observation from the plurality of observations, calculating a percent of proxy values for the plurality of variables that equals a mode of that observation's corresponding cluster's proxy values for the corresponding variables; and

    automatically assigning a human respondent associated with a determined observation to a cluster responsive to a determination that a value of a variable provided by the human respondent causes the human respondent to be classified as typical of the cluster based upon ~~outputting~~ the percent for ~~each~~ at least one observation, one or more of the plurality of clusters usable to manage a marketing strategy.


2.  (Currently Amended) A computer-assisted method for evaluating a cluster assignment for an observation, comprising the activities of:

    for each of a plurality of observations, obtaining a data set containing no more than one proxy value for each of a plurality of variables, each variable having a plurality of possible values, the data set also containing a cluster assignment for the observation;

    for each observation from the plurality of observations, estimating a purposeful probability that a particular possible value from the plurality of possible values for a particular variable will be purposefully provided by observations assigned to a particular cluster from a plurality of clusters; and

    automatically assigning a human respondent associated with a determined observation to a second cluster of the plurality of clusters responsive to a determination that a

value of a variable provided by the human respondent causes the human respondent to be classified as an outlier of a first cluster of the plurality of clusters based upon at least ~~oneoutputting each~~ purposeful probability, one or more of the plurality of clusters usable to manage a business tactic.

3. (Previously presented) The method of claim 1, further comprising the activities of: for each observation from the plurality of observations in each cluster from the plurality of clusters, calculating a serendipity probability for each possible value, the serendipity probability is a measure of a probability that an observation in a particular cluster will be randomly associated with any one of the plurality of possible values for a particular variable;

for each observation from the plurality of observations, calculating a ratio of the purposeful probability to the serendipity probability;

for each observation from the plurality of observations, calculating a logarithm of the ratio to obtain composition analysis score; and

outputting the composition analysis scores for each observation in each cluster.

4. (Previously presented) The method of claim 1, further comprising the activities of: for each observation from the plurality of observations, assuming that before the observation can be made, the observation has an equal probability of being in any identified cluster from the plurality of clusters;

for each observation from the plurality of observations, assuming that the purposeful probabilities are true;

for each observation from the plurality of observations, using Bayes' Theorem to calculate a Bayes probability that a particular observation can be in each cluster conditional upon the observation's proxy value to each variable;

outputting the Bayes probability that each observation can be in each cluster.

5.  (Currently Amended) A computer-readable medium containing instructions for activities comprising:

   for each of a plurality of observations, obtaining a data set containing no more than one proxy value for each of a plurality of variables, each variable having a plurality of possible values, the data set also containing a cluster assignment for the observation, the cluster assignment identifying one cluster from a plurality of clusters;

   for each observation from the plurality of observations, calculating a percent of proxy values for the plurality of variables that equals a mode of that observation's corresponding cluster's proxy values for the corresponding variables; and

   <u>automatically assigning a determined observation, of the plurality of observations, to a second cluster of the plurality of clusters responsive to a determination that a value of a variable causes the determined observation to be classified as between a first cluster of the plurality of clusters and the second cluster based upon an output of</u> ~~outputting~~ <u>the</u> percent for ~~each~~ <u>the</u> observation<u>, one or more of the plurality of clusters usable to make a medical diagnosis</u>.

6.  (Currently Amended) An apparatus for evaluating a cluster assignment for an observation, comprising:

   for each of a plurality of observations, means for obtaining a data set containing no more than one proxy value for each of a plurality of variables, each variable having a plurality of possible values, the data set also containing a cluster assignment for the observation, the cluster assignment identifying one cluster from a plurality of clusters;

   for each observation from the plurality of observations, means for calculating a percent of proxy values for the plurality of variables that equals a mode of that observation's corresponding cluster's proxy values for the corresponding variables; and

   <u>a processor adapted to automatically assign a determined observation, of the plurality of observations, to a cluster responsive to a determination that a fraction of values of variables associated with the determined observation correspond to values typical of the</u>

cluster based upon an output of ~~means for outputting~~the percent for ~~each~~ the determined observation, one or more of the plurality of clusters usable to manage a financial strategy.

7.  (Currently Amended) A computer-readable medium containing instructions for activities comprising:

for each of a plurality of observations, obtaining a data set containing no more than one proxy value for each of a plurality of variables, each variable having a plurality of possible values, the data set also containing a cluster assignment for the observation;

for each observation from the plurality of observations, estimating a purposeful probability that a particular possible value from the plurality of possible values for a particular variable will be purposefully provided by observations assigned to a particular cluster from a plurality of clusters; and

automatically assigning a determined observation, of the plurality of observations, to a second cluster of the plurality of clusters responsive to a determination that a fraction of a values of variables associated with the determined observation causes the determined observation to be classified as an outlier of a first cluster of the plurality of clusters based upon an output of at least one ~~outputting each~~purposeful probability, one or more of the plurality of clusters usable to manage a pharmaceutical drug development process.

8.  (Currently Amended) An apparatus for evaluating a cluster assignment for an observation, comprising:

for each of a plurality of observations, means for obtaining a data set containing no more than one proxy value for each of a plurality of variables, each variable having a plurality of possible values, the data set also containing a cluster assignment for the observation;

for each observation from the plurality of observations, means for estimating a purposeful probability that a particular possible value from the plurality of possible values for a particular variable will be purposefully provided by observations assigned to a particular cluster from a plurality of clusters; and

a processor adapted to automatically assign a determined observation to a second cluster of the plurality of clusters responsive to a determination that a fraction of a values of variables associated with the determined observation causes the determined observation to be classified as between a first cluster of the plurality of clusters and the second cluster based upon at least one ~~means for outputting each~~ purposeful probability, one or more of the plurality of clusters usable to make an economic decision.